

What is claimed is:

- [Claim 1]** A method for preparing a transmission electron microscopy (TEM) sample for electron holography, the method comprising:
- forming a sacrificial material over an area of interest on the sample;
 - polishing the sample to a desired thickness, wherein said area of interest is protected from rounding during said polishing; and
 - removing said sacrificial material from the sample following said polishing.
- [Claim 2]** The method of claim 1, wherein said sacrificial material comprises an adhesive material.
- [Claim 3]** The method of claim 2, wherein said adhesive material comprises an organic, epoxy-phenolic resin.
- [Claim 4]** The method of claim 3, further comprising oven curing said adhesive material following the formation thereof on the sample.
- [Claim 5]** The method of claim 4, wherein said adhesive material is cured for about for about two hours at a temperature of about 70°C.
- [Claim 6]** The method of claim 2, wherein said adhesive material is removed by an ammonium hydroxide (NH₄OH) solution so as to leave said area of interest substantially intact.
- [Claim 7]** The method of claim 1, further comprising de-layering the sample down to the area of interest prior to said forming said sacrificial material.
- [Claim 8]** The method of claim 7, further comprising ultrasonically cleaning the sample prior to said forming said sacrificial material.
- [Claim 9]** The method of claim 8, further comprising applying an acetone solution to said sample following said polishing.
- [Claim 10]** The method of claim 6, further comprising optically inspecting the sample following the removal of said adhesive material.

[Claim 11] A method for preparing a transmission electron microscopy (TEM) sample for electron holography, the method comprising:

forming a sacrificial material over an area of interest on the sample;
forming a protective layer over said sacrificial material;
polishing the sample to a desired thickness, wherein said area of interest is protected from rounding during said polishing; and
removing said sacrificial material and said protective layer from the sample following said polishing.

[Claim 12] The method of claim 11, wherein said sacrificial material comprises at least one of a chromium (Cr) and a tungsten (W) layer.

[Claim 13] The method of claim 12, wherein said protective layer comprises a tetraethyl orthosilicate (TEOS) layer.

[Claim 14] The method of claim 12, wherein said sacrificial material is removed by soaking the sample in a removal solution so as to leave said area of interest substantially intact.

[Claim 15] The method of claim 11, further comprising de-layering the sample down to the area of interest prior to said forming said sacrificial material.

[Claim 16] The method of claim 15, further comprising ultrasonically cleaning the sample prior to said forming said sacrificial material.

[Claim 17] The method of claim 14, further comprising optically inspecting the sample following the removal of said adhesive material.